National Agricultural Research Systems' (NARSs) Vision of International Agricultural Research

The Sub-Saharan African Perspective

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The Sub-Saharan Africa Perspective[1]

BACKGROUND

1 Sub-Saharan African national agricultural research systems (NARSs) vision of agricultural research is guided essentially by the compelling goal of improving the living conditions of the African people National, regional and international research efforts must thus be addressed, first and foremost, to meet the goals for the food and agricultural development dimension, which is a major challenge

2 Sub-Saharan African NARS' perception of how to tackle the challenge is one which calls for a complete vision of the food and agricultural development "problematique" Such a vision assumes that agricultural research is only one element of a chain which includes technology generation and transfer in relation to production and transformation but also policy measures to create an economic and institutional environment conducive to the optimum use of research results In that connection the issue of support to research output in terms of complementary policy measures or infrastructural development should not be ignored

3 The food and agricultural development challenge facing Sub-Saharan Africa can be briefly assessed as follows As stated in the summary of a recent "Policy Dialogue on Technology Development and Transfer in Africa" (1993) "within the next three decades, food needs in Africa will triple During the same period, per capita arable land is projected to decline to less than half of the current levels Sustainable development in Africa will require growth in agricultural production of approximately 4% per annum Meeting this challenge will require sustained increase in agricultural productivity that builds on and is linked to an enhanced sustainable natural resource base Indeed according to the FAO, to obtain a production growth rate of 4 to 5% a year will require arable land expansion which would contribute 27% of production increase, increase in yield of 51% and an increase in cropping intensity (22%) Recent studies show that investments in Africa in technology development and transfer that address this issue yield positive returns" and that Africa has a great potential in production increase, especially with respect to food production

4 Agricultural research can therefore be seen as a MUST and at the same time a rewarding tool for economic and social development in Sub-Saharan Africa

5 The need for enhancing agricultural production and productivity in Sub-Saharan Africa stems from a number of important considerations The first consideration relates to food security Food security, which is the ability to have access in a sustainable manner to the quantity and quality of food needed for a healthy and productive life, has become a serious problem for Sub-Saharan Africa over

[1]The need for an African NARS vision paper was discussed and agreed upon at the NARSs/TAC/IARCs Consultation Meeting held at Warda Bouake Cote d Ivoire June 22 24 1994 Drs M S Sompo Ceesay (INSAH) and C G Ndiritu (KARI) made contributions on the basis of the discussions and Dr Moise Mensah Benin helped SPAAR to prepare a draft paper The paper was further reviewed by the African NARSs leaders attending the International Centers Week (ICW) on October 25 1994 (namely Lucas Gakale Botswana Kwesi Haizel Ghana R A D Jones Sierra Leone Uzo Mukwunye IFDC Africa Togo Cyrus Ndiritu Kenya Bongiwe Njobe South Africa Maurice Onanga Congo M S Sompo-Ceesay INSAH Mali Saydil Toure CIRDES Burkina Faso Ndiaga Mbaye CORAF Senegal and J K Mukiibi Uganda) It was then finalized by Moise Mensah The task was carried out with support from IFAD

the last three decades Domestic food production per capita has severely declined while the capacity to compensate by commercial imports was grossly inadequate At the household level, farming families which are the bulk of the population in most countries suffered losses in production and income due inter-alia to a series of drought spells and became victims of hunger However, beyond the drought and other natural calamities, food insecurity was a result of agricultural policies which did not give proper attention to food production, especially by the small farming communities That lack of attention was reflected, for example, in the resource allocation patterns and the insufficient support given to women who play a key role in food production within the region

6 If, as expected the food needs are to triple over the next thirty years, it will be impossible to meet the gap between those needs and the food production obtained at current growth rates by increased food in import levels The financial resources required to meet such import levels are unlikely to be available to African countries Moreover, even for those countries which could afford it, food import may be a very expensive proposition Indeed needed food commodities may not be readily available in adequate quantities and quality from traditional suppliers The reasons may include environmental policies such as land set-aside measures, reduction in the use of fertilizers as well as other disincentive policy measures to food surplus production, namely drastic reductions in price subsidies as a result of new international agreements on trade Therefore, the higher the rate of food self-sufficiency at national or sub-regional levels, the better the prospects for food security for Sub-Saharan Africa

7 A second consideration is the need to boost export earnings For many countries in Sub-Saharan Africa, agriculture is likely to remain by far the most important source of export and foreign exchange earnings for the coming decades Also in the same line, a third consideration is that agriculture will have to be the engine in promoting the process of industrial development This makes it imperative to support research and promote the rural system of which agriculture is only a part to lead to the improvement of rural household income and create jobs beyond the agricultural sector Beyond providing jobs and supplying raw materials for agro-industries, agriculture is also expected to be an important source of capital formation for the development of other economic sectors Finally, higher agricultural productivity levels are essential to the preservation of the natural resource base including land, water, plant, animal, and energy resources In that connection, natural resource management must be seen as an important dimension of the productivity boosting effort and not as a goal in itself

8 Along with the preservation of the natural resource base, Sub-Saharan Africa's agriculture must address the issue of sustainability For the purpose of this paper, sustainable agriculture will be defined as "the successful management of resources for agriculture to satisfy changing human needs, while maintaining or enhancing the natural resource base and avoiding environmental degradation" (CGIAR 1988) Sustainable agriculture is a location specific issue "In a sustainable agricultural production system in a given location, there should always be increasing knowledge, skill, and understanding of the physiochemical factors, biological elements of the production system, changing and appropriate technologies at the disposal of the farmer, social cultural background, economic viability and ecological soundness" (B N Okigbo, 1989) Sustainable agriculture depends on a complex set of requirements related inter-alia to the political and administrative context, the economic and social systems, international trade and the financial environment However, the single most important requirement is a "technological system that can search continuously for new solutions" leading to "a production system that respects the obligation to preserve the ecological base for development" (the World Commission on Environment, 1987)

INSTITUTIONAL ENVIRONMENT AND ORGANIZATION OF RESEARCH SYSTEMS

9 *The rationale for agricultural research* Agricultural research activities in Sub-Saharan Africa date back to the late 1800s They were carried out by research stations established essentially by the British, Belgian, and French colonial governments to develop commodities such as cotton, coffee, tea, palm oil for the European market Little attention was given to food crops The results obtained were in many ways remarkable, but, again centered on specific goals In post-independence Sub-Saharan Africa, agriculture research systems can hardly claim a level of productivity equivalent to that of their predecessor colonial research organizations although some significant contributions made by NARSs cannot be ignored (e g improved varieties of crops and cultural practices in most countries, good mangrove rice varieties in Sierra Leone, streak resistant maize varieties in Togo) Yet, the magnitude of the current economic and food crisis, the challenge facing agriculture on the eve of the 21st century would require the establishment of strong and highly productive agricultural research systems A report of the Institut du Sahel/SPAAR task force poses the problem which agricultural research must address in the following terms "Science based technology generation should spearhead agricultural development in four areas of priority concern

(a) maintaining and improving food security by making research responsive to market conditions and consumption trends,

(b) orienting research towards new markets for cash/export crops and animal products/fisheries (diversification) for which the region has a comparative (climate, distance to market outlets and labor costs),

(c) broadening research to include upstream (production costs) and downstream (alternative product uses) considerations in a sub-sector (filiere) approach to cash in on market opportunities, and

(d) leading research on track to make agrarian systems sustainable in a rapidly changing ecological and economic environment "

10 The NARS vision of the institutional framework to carry out the tasks discussed above is one that encompasses not only the classical state controlled research institutions but also private sector research initiatives, universities and relevant non-governmental organizations

11 Having accepted the statement that science based technology generation should spearhead agricultural development, one could raise the issue of scope, i e the extent to which the agenda should cover fundamental, strategic, applied and adaptive research activities and how the tasks are divided among the various actors In formulating CGIAR priorities and strategy (1993), TAC considered that in the long term, there will be a continuing need for international efforts in the following areas

(a) germplasm collection, conservation, characterization, evaluation and enhancement, and basic genetic manipulation of plants and animals of transnational and or global significance,

(b) strategic research on global issues of natural resources conservation and management,

(c) strategic research on public policy and public management issues of global significance, and

(d) global information services related to research in agriculture, forestry and fisheries

12 Sub-Saharan African NARS accept the need for a global effort coordinated by the CGIAR as mentioned above However, when it comes to setting priorities, their understanding of where the emphasis should lie should be taken into account, in recognition of their better knowledge of local and regional circumstances

FACING AN EVOLVING CHALLENGE COLLABORATION BETWEEN NATIONAL AGRICULTURAL RESEARCH SYSTEMS (NARSs) AND THE CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH (CGIAR)

13 While the new emphasis in agricultural research from the CGIAR perspective is on socio-economic and environmental research, contrasting with a decreasing concern for production and productivity improvements, Sub-Saharan African NARS consider that a proper balance must be established between those two alternatives

14 Again, in relation to natural resource management, this must be taken as a key aspect of the productivity increase effort but not as goal in itself Due consideration should be given to both plant and animal genetic materials Likewise, a better understanding of the roles of livestock, fisheries and forestry resources in Sub-Saharan African rural economies should lead to a proper balance in allocation of research efforts between crop production and other above-mentioned economic activities Moreover, the limited acreage of land under irrigation within the region should not lead to neglecting water harvesting and management as an important factor for future gains in agricultural productivity

15 In discussing collaboration between NARSs and the CGIAR, account should be taken of the fact that Sub-Saharan African NARSs have come of age Over the last thirty years, they have built up an increasing mass of competent and experienced staff who are holding to their mission as research scientists in spite of financial difficulties The qualifications and the commitment are there What is missing is adequate and sustainable financing In spite of the difficulties, Sub-Saharan African countries have been making serious efforts to build effective and productive national research systems which take due consideration of their various component-institutions in order to ensure optimum use of human and financial resources The basis for upgrading those research systems has been national agricultural strategic plans which propose a good priority setting process, effective financial control and accountability mechanisms and a credible research evaluation (Tanzania offers an illustration of such plans, see Annex I)

16 Moreover, in order to improve the cost-effectiveness of agricultural research, Sub-Saharan African countries have been promoting regional cooperation in a way which pools together national capacities to carry out research on themes of common interest It is the so-called "pole" approach whereby a group of NARS identify one of them, which the responsibility is given to generate technologies utilizable by all countries concerned These countries agree to do this within the context of a Regional Framework for Action (FFA) One example of the Framework for Action for Revitalizing Agricultural Research in the Sahel is indicated (see Annex II)

17 Besides the Sahel, other regions have also initiated frameworks for action The Southern Africa Region has formulated one within the framework of the Southern African Development community (SADC) The FFA exercise was supported by the Southern African Center for

Cooperation in Agricultural Research and Training (SACCAR) and SPAAR The pilot country is Tanzania The Framework for Action for the 18 countries of the Humid Zones in the Western and Central Africa is still in gestation

18 The Framework for Action for Eastern and Central Africa is at an advanced stage of formulation and will be presented to the SPAAR Plenary Session in March 1995 A novelty of this FFA is that it is supported by an association for strengthening agricultural research in Eastern and Central Africa (ASARECA) comprising ten member nations, which provides a strong regional institutional base and political validation for the implementation of agreed regional research programs (see Annex III)

19 Besides the collaborative activities based on the Framework for Action, other regional cooperation arrangements have been in operation There are collaborative networks grouping researchers across countries on the same research theme For example, CORAF (Conference des Responsables de la Recherche Agronomique en Afrique) has six regional research networks, some of which include research systems outside Africa (e g France) Many other collaborative regional networks are assisted by IARCs

20 The CGIAR is cognizant of the fact that the judicious implementation of its priorities and strategy requires effective collaboration with NARS that are the channel through which the technology generation process goes from the researcher to the farmer whether research is carried out by national, regional, or international institutions

21 Indeed national agricultural research systems in Sub-Saharan Africa have been enjoying the collaboration of International Agricultural Research Centres for the last three decades Most of the Centres are sponsored by the Consultative Group on International Agricultural Research (CGIAR) Key international research centres have their headquarters and major facilities located in the region Five of them are CGIAR centres They include the International Institute of Tropical Agriculture (IITA) which was the first to be established, the former International Livestock Center for Africa (ILCA) and the International Laboratory for Research on Animal Diseases (ILRAD) which have now merged into ILRI, the West Africa Rice Development Association (WARDA) and the International Center for Research in Agroforestry (ICRAF) Number of International agricultural Research Centres located elsewhere have branches and/or sizable programs in the region e g ICRISAT, CIP, ISNAR CIAT are among those African NARS also recognize the contribution of international research institutions not sponsored by the CGIAR They include ICIPE, IFDC as well as research and academic institutions of developed countries such as CIRAD and NRI

22 The International Agricultural Research Centers have assisted Sub-Saharan African NARS in carrying out the following activities (CGIAR/TAC)

- assessing the changing research needs
- the collection and dissemination of scientific information
- the collection, preservation and exchange of germplasm and improvement of methodology for utilizing germplasm
- the development of germplasm for crops, fish and animals dominant is the economic activity of the countries
- the development of resource management and husbandry principles appropriate to the varied agroecological circumstances
- strategic research on production processes

- specialized human resource training in managerial scientific and technical skills
- assistance in priority setting and research strategy and program formulation
- bridging between basic and strategic research on the one hand and applied and adaptive on the other

23 Over two decades of experience in collaboration between IARCs and NARSs have shown that the relationship has not always been easy However, despite some understandable frustrations on both sides, IARCs and NARSs have managed, in some cases to overcome problems and build their collaboration on a mutually accepted basis One striking example of such a pattern of collaboration was established by the West African Rice Development Association (WARDA) with a group of National Agricultural Research Systems (see Box 1)

Box 1 **NARS/IARC Collaboration The WARDA Model**

The WARDA collaborative approach assumes that "the partnerships have two basic objectives The first is to achieve a more complementary and efficient sharing of research tasks between NARS themselves and between NARS and IARCs by allocating responsibilities on the basis of comparative advantage The second is to achieve scientific critical mass on a regional basis " This calls for close cooperation between NARS on the one hand and between NARS and relevant IARCs on the other Such a collaboration requires new coordination mechanisms The WARDA approach recommends that where regional agricultural research institutions exist, (e g INSAH in the SAHEL and SACCAR in Southern Africa) those institutions should be the coordinators and facilitate joint priority setting and the development of complementary National Plans In the absence of Regional Research organizations, an appropriate International Agricultural Research Center could play the coordinating role

In operational terms, the WARDA approach is based on a set of Regional task forces composed of all NARS Rice Scientists in the region who are working on closely related thematic problems in similar agro-ecologies Those task forces are self managing and carry out the following functions Research planning, technology transfer, dissemination of information and allocation of assistance for regional research activities Each task force formulates a Regional Master plan after identifying priority constraint and related research issues within its thematic area and establishes regional research priorities Subsequently, the relative strengths and weaknesses of each NARS are critically examined and specific tasks are assigned to various NARS accordingly Those NARS with strengths in a particular research discipline play a lead role, working with WARDA in advanced research and generation of technologies that must be tested by all National programs which take part in the exchange and dissemination of research results

From its experience, WARDA has drawn a few lessons on how to handle the new IARC/NARS partnership The first lesson is that, for National Programs to assign a Regional Coordinating function to an IARC they have to be confident not only in the International Centre s technical capacity to do so but also in its ability to act objectively and remain above potential conflicts of interest The second lesson is that the role of the IARC in guiding the development of national and regional research agenda would need political validation at national levels A third lesson is that the mandates of some IARCs, may need to be reviewed to allow greater room for the major pro-active role required in regional coordination

The WARDA experience offers a good answer to the issue of possible conflict between IARC transnational mandate and the need to address National priorities by offering a mechanism for National Research Systems to share priority programs on agreed issues

24 The central issue as far as NARSsIARCs cooperation is concerned is how should responsibilities be allocated so as to reflect the concerns and priorities of NARS That issue was addressed by a Nairobi Roundtable (June 1992) in connection with the roles envisaged for IARCS, and

NARS in the implementation of programs related to specific key-themes, mainly commodity research and germplasm management, proposed ecoregional mechanisms, IARC training activities in strengthening institutions, the emergence of biotechnology, networking, information management, regional organizations **One basic and important principle strongly endorsed by NARS is that collaborative research should not be focused on centres but program based It is the nature of the program which should dictate the division of tasks between relevant IARCs and NARS This is reflected in the regional research pole approach which African NARS consider as a possible way of looking at regional research endeavors worldwide**

25 Within the framework of the ecoregional mechanisms (see Box 2), the future basis for IARCs/NARS collaboration should include the following

Governance

- Collaborative projects between IARCs and NARS should be developed in order to encourage pooling of resources

- Research consortia on networks where research tasks are divided among partners and resources are shared should be developed

- The leaders of NARS need to meet to discuss common problems and the ways in which they can complement the efforts of IARCs

- IARCs and NARS must plan together on a given commodity In that connection, the question as to whether IARCs should carry out research on all commodities or only on those where they have comparative advantage must be addressed

- Efforts in the fields of collection, conservation and exchange of plant genetic resources need to be shared and coordinated

- In respect of the transfer of germplasm from IARCs to the private sector, a set of conditions relating to future access to the germplasm needs to be developed Those conditions should guarantee future availability to NARS

- IARCs should assist NARS in presenting research findings to policy makers in a manner that will ensure increased support for agricultural research

- Research programs on agro-ecological zones should be carried out essentially by using existing or upgraded facilities of either a NARS or an IARC

- The definition of priorities and the implementation of eco-regional research program must involve close collaboration between IARCs, and NARS

- The NARSs must take the initiative in establishing this new eco-regional orientation, redefine their research priorities and strengthen their structures accordingly

Box 2 **The Ecoregional Concept**

The ecoregional approach was proposed by TAC primarily as a vehicle for increasing research on the conservation and management of natural resources -- a need which emerged from the priorities analysis -- and for rationalizing CGIAR center contacts with NARS Since the ecoregional approach is a new key organizing principle for the CGIAR, the main concepts are reiterated here

TAC has characterized an ecoregion as an agroecological zone, regionally defined Inherent in the definition is the acknowledgment that there is a high degree of location-specificity in both the biophysical and socio-economic aspects of natural resource management research and that therefore the ultimate comparative advantage in ecoregional research will lie with national programs

However, the global research community does not presently have an effective paradigm for natural resource management research Thus, identifying such a conceptual framework is a goal of truly international relevance It is also a goal fully congruent with the justification for international research in germplasm, itself increasingly dependent on effective applied and adaptive research in national programs to develop plant materials and management guidance appropriate to local farmers

Training

- The IARCs will continue to have a comparative advantage in training of scientists in the 1990s and beyond due to better facilities and experienced staff NARS should develop their training capabilities to take over the production oriented courses and leave IARCs with specialized types of training There should be tripartite collaborative arrangement between NARS, IARCs and universities to ensure relevant and practical training of scientists at degree levels

- 15% to 20% of IARC budget should be devoted to training

- IARCs should devote more effort to developing training facilities and the training of trainers in the NARSs That effort would enhance IARCs existing mandates as they will be able to make greater impact with reduced cost due to stronger collaboration with sustainable NARS

- IARCs and NARSs should explore together ways of retaining well trained young scientists at the NARSs through some form of remuneration This would support NARS research and avoid brain-drain

Biotechnology

- Biotechnology research is relatively new in sub-Saharan Africa but has the potential to increase agricultural production even in the less favorable eco-systems Therefore research in the field of biotechnology should be integrated into the NARS programs where appropriate

- IARCs should play a pioneering role in assisting NARS efforts to keep track of the progress made in the field and be ready to exploit any opportunities offered

Networking

- Networks are important and should be encouraged but their purposes and modalities should be clearly defined and followed

- An effective and collegial partnership through a truly participatory planning and implementation should replace the top-down approach

- Inter-NARS collaboration linkages should be encouraged especially in similar agro-ecological locations

- The proliferation of networks on the same commodity should be avoided as it makes proper coordination impossible and leads to duplication of efforts

- Networks should have an in-built capacity/mechanism to measure impact

Information and documentation

- IARCs should facilitate access of NARS to rapid information storage, retrieval and dissemination through cost effective new technologies available

- NARS should strive for a certain level of independence while collaborating with IARCs on the following

    * advice on the specification for the procurement and maintenance of hardware and software, and donor support,
    * training on library management, scientific writing, editing,
    * Information services including support for NARS national science journal publication,
    * editorial assistance to produce publications, including use of IARC facilities by NARS editors, and
    * assisting NARS' scientists publish their research quickly through the use of appropriate IARC journals and publications

Regional collaboration

- Cooperation between the CGIAR system and sub-Saharan Africa should take account of the re-emergence of regional agricultural research organizations which are becoming credible actors in the international scientific community SPAAR has recognized and is actively supporting those organizations

- A distinction must be made between those activities that may be best implemented by regional organizations and those which are better handled through bilateral arrangements

- The CGIAR should identify existing regional organizations through which they could liaise to deal with regional problems rather than trying to deal with many small NARS

- The work of national and regional organizations and the NARS should be regarded as complementary and not competitive

- The CGIAR centres should be transparent partners with regional organizations rather than being patrons

- Regional organizations should set criteria for support from the IARCs based on their needs

26 From the above mentioned points, it is clear that the vision of sub-Saharan African NARS on future cooperation with the CGIAR sponsored research system is one that strongly calls for the affirmation of the new mode of partnership When it comes to donor support, the emphasis should be placed more on equipment supply and provision of research funds than technical assistance With respect to technical assistance, its impact on human resource development should be regularly assessed and its sources of expertise should include exchange of research scientists from the continent

THE CHANGE IN STRATEGY FOR INTERNATIONAL COOPERATION IN AGRICULTURAL RESEARCH POLICY IMPLICATIONS

27 *Overview of Sub-Saharan Africa within the new CGIAR priority framework* In preparing its recommendations for the CGIAR on resource allocation (1994-98) the Technical Advisory Committee (TAC) carried out an extensive exercise on priority setting TAC's recommendation on CGIAR priorities come under four aspects i e by category of activity, region, commodity and eco-region

28 By category of activities, there is a substantial increase in priority for research on conservation and management of natural resources over the period 1991 to 1998 (from 13 to 18%) and for socio-economic, public policy and public management research (from 9 to 11%) Research on germplasm enhancement and breeding has a small increase from 21 to 22% Research on the development and management of production system has fallen in priority (from 33 to 29%) So did institution building (from 24 to 20%) While the emphasis on conservation and management of natural resources is most welcome in sub-Saharan Africa, the reduction in priority on development and management of production systems and on institution building would go against African NARS perception of priority areas

29 By region, TAC recommends an increase in priority for Asia (from 29 to 33%) and Latin America and Caribbean (from 15 to 17%) but a decrease in priority for sub-Saharan Africa (from 43% to 39%) and also for West Asia and North Africa (from 13% to 11%) The decrease in priority for sub-Saharan Africa is a significant policy change vis a vis the situation in the 1980s as described earlier Part of the explanation should be the reclassification of the regional relevance of some livestock research activities from a sub-Saharan African focus to a global focus Although with 39% of expected resource allocation by CGIAR in 1998, sub-Saharan Africa still holds the first rank on the list of beneficiaries, the decrease in emphasis may not do justice to the region's acute needs and difficulties

30 By commodity, there is an increase in priority for groundnuts and soybean and a reduction for phaseolus and pigeon pea The priority for cereals, roots and tuber crops, other food legumes banana and plantain will be maintained While the overall priority for livestock would also be maintained, TAC considered that CGIAR was over investing in livestock research in sub-Saharan Africa, a

consideration which should relate to the previously mentioned reduction in regional priority On the other hand cassava will benefit from a major increase in resource allocation largely through the incorporation of the biological control program of IITA in the Center's core program

31 By eco-region, TAC identify six priorities zones, i e a) the warm arid and semi arid tropics, and b) the warm humid and sub-humid tropics in sub-Saharan Africa, c) the cool sub-tropics with winter rainfall in West Asia and North Africa, d) the warm arid and semi-arid tropics and sub-tropics and the warm humid and sub-humid tropics and sub-tropics in Latin America and the Caribbean It may be worth noting that sub-Saharan Africa will be receiving about one third of the resources allocated to the CGIAR system wide eco-regional research programs

32 On the whole, at least over the coming five years, the CGIAR would be providing a significant amount of support to agricultural research in sub-Saharan Africa For that support to yield optimum result, bearing in mind the proposed new approaches to IARCs/NARS collaboration, a number policy implications must be examined and addressed

POLICY IMPLICATIONS

33 *For the CGIAR* The first policy implication for the CGIAR would be the review of the CGIAR/TAC program planning process to ensure that the CGIAR priorities and related programs do reflect at all times the common concerns of the various developing regions supported by the consultation group Indeed, the funded CGIAR activities derive from proposals made by various international agricultural research centres based on their own assessment of what the needs are in their respective constituencies There is no systematic requirement or mechanism to ascertain that relevant national research systems have contributed to the needs assessment There could be a risk that, in formulating their proposals, IARCs may want to stick at all cost to pre-determined CGIAR priorities to the detriment of the felt needs of their constituencies In its analysis and recommendations for the CGIAR medium term resource allocation 1994-98, TAC selected, among other criteria, some institutional indicators to assess IARCs for resource allocation purposes One such indicator is collaboration with NARS However, the qualitative content of such collaboration is not spelled out and there is no indication that it involves taking NARS views into account in the IARC program formulation process Because of their specific mandates, some international research centres do base a substantial part of their program on NARS driven need assessment What is required is a generalized procedure, monitored by the CGIAR to ensure that the CGIAR system is driven to the greatest extent possible by the major concerns of NARSs' agenda The eco-regional approach should promote this In that connection, the cost benefit analysis of money spent on research in Africa needs to be reviewed in terms of the real output of various expenditure items, especially technical assistance This is important if the issue of accountability is to be addressed properly

34 The second policy implication related to funding national and regional agricultural research by donors The issue arises in connection with the SPAAR new initiative promoting the development of national agricultural strategic plans and programs within the context of a regional Framework for Action (FFA) One important consideration behind the FFA and national strategic plan exercise is that donors will join forces with recipient countries concerned to set up a consolidated fund to cover all the needs of a well planned agricultural research program over a span of years That is the so-called Consolidated Funding Mechanisms (CFM) which calls for pooling of effort rather than pooling of resources Experience seems to indicate that most donors are lukewarm about implementing such a mechanism even where there is evidence that the concerned recipient country and its NARS have taken the essential steps to establish a credible agricultural research plan SPAAR and CGIAR members who

happen to be basically the same, should actively pursue the discussions leading to a common understanding of the CFM and the resolution of the political and bureaucratic constraints to its implementation

35 **Another aspect of the funding issue is that the mechanisms for funding regional research efforts are much more limited and complex than those supporting national research For example, the requirement whereby loans can only be offered to individual governments, combined with the fact that grant money is scarce, make financial support to regional research activity a difficult proposition While individual African countries should be prepared to borrow for meaningful cooperative regional research efforts, the CGIAR may also want to give a special attention to this issue In that connection, the CGIAR should give a stronger and more explicit recognition and support to the SPAAR Framework for Action initiative and fully endorse the goals and mechanisms of regional partnerships bearing in mind that institutional building is a perennial endeavor which requires sustained financial support**

36 A third policy implication relates to the need for a monitoring and evaluation mechanism to assess the actual performance of IARCs as far as their interactions and pro-active collaboration with NARS are concerned That should give the related TAC criteria its fullest meaning

37 **A fourth set of policy implications relate to the issue of governance of the CGIAR system Sub-Saharan African NARS support the recommendation made by the study panel on long term governance and financial structure for a two tier deliberation and decision making structure made up of global/regional fora and a business forum for Sub-Saharan Africa They consider that the NARS should be represented by eco-political regional configurations based on NARS/SPAAR Framework for Action country groups The NARSs also recommend that SPAAR, with their assistance, prepare and update a database of prominent Africa scientists that could be involved in assisting TAC and CGIAR for tasks such as reviews and board membership in order to adequately bring African realities into the system To that effect the need for better information and communication makes it urgent for SPAAR to look into the possibilities for improving linkages among NARSs The NARSs value the importance of direct interaction with TAC through periodical meetings such as the Bouake meeting (June 1994)**

38 *For International Agricultural Research Centers* One simple and yet important implication is the need to institutionalize the consultative process between NARS and IARCs through agreed mechanisms e g by making the current practice of periodical meetings a much more systematic and structured process Another important consideration is the need to seek congruence between eco-regional initiatives and national research programs As suggested by lessons learned for the WARDA experience, some IARCs may have to re-examine their mandates to allow them to play the expected more pro-active partnership role, especially when called upon to assume regional coordination functions

39 *For Sub-Saharan African Governments* Governments must have clear policy statements on agricultural research, reflecting their commitment and the extent of their support through adequate resource allocations Governments should demonstrate their willingness to carry out the reforms necessary to build sound national research systems Governments must take serious steps in mobilizing domestic resources beyond budgetary allocations That implies policy measures to attract participation from parastatals, marketing boards, private agricultural commodity-centered companies, NGOs, etc

40 Governments should ensure that their requests for external aid clearly and consistently shows agricultural research as a priority area Governments should take adequate measures to support linkages within the national research systems (universities, state research institution, private research bodies, etc) An incentive framework must be established to retain and motivate national scientists Government must promote the required coordination mechanism between the various players, i e , NARS, donors, policy makers, etc Governments must facilitate the political validation of regional agricultural research programs and support to the fullest extent possible, regional organizations through timely release of human and financial resources, especially in connection with the implementation of the regional pole concept

41 *For National Research Systems* NARS have to establish their credentials through the formulation of credible national research strategic plans which show a) a well articulated priority setting process bearing in mind realistic funding prospects and human resource capacity, b) effective control over all budgetary allocations, c) a satisfactory financial control and accountability systems, and d) a valid research evaluation system NARS should build a political constituency for agricultural research That implies, inter-alia two important initiatives which have often been missing on the NARS agenda

42 The first initiative is aimed at broadening the clientele of agricultural research by pushing research beyond agricultural production and reaching the rural systems as a whole That initiative would also enable a better attack on rural poverty alleviation by addressing the income generation issue in a more effective manner The second initiative would be the promotion of agricultural policy research The need for policy research in agriculture arises from the recognition that the capacity for economic and policy analysis in the agricultural sector has lagged behind the other sectors It has been argued that if agricultural research is held back by unfavorable policy environments, then it is incumbent on research leaders to hire or contract the necessary skills to influence the policy environment (Elliot 1991) SPAAR has been consistently conveying this message to the NARSs recognizing that policy research output will enable more informed priority setting at the national and regional levels, and improve policy making It would provide decision makers with the proper argument to make a good case for a better ranking of agricultural research when it comes to priority setting for resource allocations NARSs should take advantage of SPAAR's interest and guidance in this field of research

CONCLUSION

43 Governments in Sub-Saharan Africa have come to realize that the recovery and development of the agricultural sector which is the backbone of their economies call for energetic action in the field of agricultural research To that effect national agricultural research systems are restoring, building, or improving their capacity to deliver good scientific work Their efforts are being addressed at both national and regional research At the national level, agricultural research strategic plans are prepared to offer credible research programs to governments and donors in the hope that a consolidated funding mechanism will allow governments, donors, private sector etc to pool together adequate amounts of funds to finance an agreed program over an adequate span of time At the regional level, Sub-Sahara African countries are joining forces through associations or other collaborative set up to carry out research on common problem areas SPAAR has been assisting those efforts by promoting the formulation of regional frameworks for action which provide guidelines to NARSs to ensure that their national plans fit into regional concerns CGIAR-sponsored IARCs also provide significant inputs into this regional endeavor

44 While collaboration between the CGIAR system and NARSs is perceived as fruitful, the time has come for a new partnership whereby NARS agenda would be more effectively taken into account in formulating the CGIAR priorities and programs The decision of the CGIAR to approach international cooperation in agricultural research by using the eco-regional research mechanisms as a major instrument, offers an opportunity to bring about the qualitative changes required in NARS/CGIAR relationships It should provide a framework conducive to more fruitful cooperation between international agricultural research centers and national research systems, and lead to the required quantity and quality of research output to allow Sub-Saharan Africa to win the race against hunger and poverty

TANZANIA
National Agricultural and Livestock Research Masterplan

The government of Tanzania recognized that agricultural development, which is the engine of economic and social development was hampered by the stagnation in agricultural research caused, inter-alia by severe funding constraints To break this vicious cycle, the government decided to formulate a National Agricultural and Livestock Research Master Plan (NALRM) with the support of the World Bank and other donors, especially members of the SPAAR Group

The Tanzanian National Agricultural Research system is comprised of four categories of institutions The first category consists of the Department of Research and Training, which is directly under the Ministry of Agriculture, Livestock Development and Cooperatives The second category includes the Tropical Pesticides Research Institute and the Uyole Agricultural Centre, which are semiautonomous parastatals under the same ministry Two universities namely the Sokoine University of Agriculture and to a lesser degree the University of Dar es Salaam undertake research, mainly in relation to their postgraduate programs The fourth category includes a number of private estates which concentrate their research work on their respective crops namely tea, wattle, and barley

The Department of Research and Training carries out the bulk of the National Agricultural Research activities through a network of over fifty research institutes and associated centers/sub-stations located in seven agro-ecological zones (Zonal Research and Training Centers) and covering the main areas of crop and livestock research Apart from the zonal research set up, a few institutions undertake specialized work and have a national mandate They include the Animal Disease Research Institute, the Tse-Tse and Trypanosomiasis Research Institute and the National Soil Institute

The Department of Research and Training is headed by a commissioner reporting to the principal secretary of the Ministry of Agriculture, Livestock and Cooperatives The commissioner is "responsible for the achievement of agreed research objectives, policies, plans and budget

Prior to the formulation of the National Agricultural and Livestock Research Masterplan, it was observed that "despite the sizable research network, which is manned by 1600 fairly well trained researchers and technical staff, the Tanzanian research services have not been able to fulfill their role in developing appropriate technological packages for farmers in the past few years " (NALRM) This was due to five major constraints

(a) *Fragmentation and poor coordination* Agricultural and livestock research were carried out by four parastatals i e Tanzania Agricultural Research Organization (TARO), Tanzania Livestock Research Organization (TALIRO), the Tropical Pesticides Research Institute (TPRI) and the Uyole Agricultural Center (UAC) Each parastatal had its own board of directors, research network and programs A Directorate for Research and Training was established under the Ministry to assume a coordination role which it could not perform, being too weak to control autonomous parastatal organizations

(b) *Inadequate funding* Agricultural research services and their programs were affected by severe cuts in funding due to economic stagnation and limitations in government

financial resource allocations Research staff were poorly paid and lacked equipment, inputs and funds to implement their programs Besides, the top-heavy and inefficient administration which characterized the parastatales did not provide the right motivation to keep staff morale and energy going

(c) *Lack of priorities* In a situation of limited funds, the priority setting could have enabled the matching of scarce financial resources to prioritized research programs Limited resources were spread over a wide range of programs Agricultural research became increasingly donor-driven and unsustainable

(d) *Poor research-extension linkages* The few results obtained from research hardly reached the farmers or other target groups of beneficiaries Except for a few research institutes, which had farming systems research programs, research-extension-farmers linkages were poor or nonexistent

(e) *Poor management* "Despite the good number of trained research staff, there is a serious lack of research management ability This has lead to mismanagement in the past, thereby choking the already constrained research system " (NALRM)

The National Agricultural and Livestock Research Masterplan has sought to address the major constraints as follows

(a) *Organization and management* Proposals have been made to address problems faced by the Department of Research and Training, which is the major player in agricultural research Those proposals include measures to streamline the headquarters and field structures to improve research management, management support services and personnel management For example, within the research management area, a national agricultural research council is to be established to support senior staff of the Department of Research and Training in setting national research priorities Besides, senior representatives of various relevant government offices and agencies, the National Agricultural Research Council membership includes representatives of universities, private sector agricultural interests and representatives of zonal farming interests Other interesting research management proposals are to amend the research planning cycle and involve a new approach to annual planning by requesting from scientists engaged in various research programs estimates of resources and time requirements for their program ensuring that the overall research program submitted to government clearly sets priorities, introducing program budgeting as a management tool, emphasizing overall coordination activities, building in a monitoring and evaluation system

With respect to personnel management which is a sensitive area, proposals are made for improving remunerations and establishing new systems of performance appraisal, staff appointments, training and development,

(b) *Setting priorities* The basic concept behind priority setting is "the most economic use of resources within the context of the national objectives and targets This implies a concentration on research programs which are likely to provide an economic or social return in the shortest possible time and with the highest input-output ratio " In

Tanzania that means research that aims at assuring food security, optimizing export returns and/or import substitution Hence the following criteria were chosen to define research priorities i) contributions to foreign exchange earnings and savings, ii) contribution to food security and food self-sufficiency, iii) enhancement of basic agricultural knowledge, iv) contribution to smallholder development, v) availability of clearly identifiable and essential research areas and topics, vi) contribution to the improvement of the environment In their application, those criteria were adjusted by modifiers, namely i) requirements to support ongoing research projects, ii) availability of suitable infrastructure or comparative cost advantage of developing such infrastructure, iii) avoidance of research duplication Other considerations were borne in mind, i e , i) balance of crop versus livestock research, ii) prospects for increasing export earnings, iii) potential for direct crop sub-sector participation in research funding

(c) *Fund requirements* For the proper implementation of the priority research programs, investments and operating costs must be met in an adequate manner which implies timeliness and sustainability of funding On domestic research mobilization, the Agricultural Research Masterplan recognized the limitations of possible government funding due to the considerable demand for public finance under the Economic Restructuring Program for areas such as infrastructure development Even under the best budget growth scenario, budget allocations alone will be insufficient for financing the programs selected in the Master Plan It was noted however, that potential domestic sources of financing, so far neglected, should be tapped They relate mainly to contributions by parastatals, marketing board and crop agencies For example, it was estimated that a 0 5% research levy would be more than sufficient to cover the recurrent costs of work on the three export crops to which research priorities were allocated, i e , coffee, cotton, and tea Another avenue which was explored in relation to domestic resource mobilization was self-financing of agricultural research (at least partially) through greater commercialization of research station activities including inter-alia crops and livestock products, seed production on surplus land However, one major constraint to reckon with is the lack of commercial ability In any case, domestic resources must continue, for some time, to be strongly reinforced by donor funding if the National Research Masterplan is to become a reality Indeed such donor funding has been significant in recent years, e g in 1989-90 and 1991 donor contributions were equivalent to 75% of government recurrent and development allocations The donors concerned have indicated in principle their interest in supporting research on certain commodities and subject-matters within the time horizon to 1995-96 What happens after is yet to be determined

(d) *Research linkages* The first problem area to be addressed is that of linkages between agricultural research, extension services and the farmers At the zonal level, by making farming system research an integral part of the research-extension activities, active participation by farmers in research is expected Zonal research-extension liaison officers will be attached to the zonal research establishment A zonal research advisory council will be established and will include, among others, regional agricultural and livestock development officers, agro-business managers and farmer representatives At the national level, a national animal research and extension planning and review committee will be formed to approve zonal proposals It will be

comprised of senior officers from the research as well as the development departments of the Ministry of Agriculture, Livestock and Cooperatives Moreover, a national agricultural and livestock research council will be the mirror of the zonal council at the national level and a national research and extension support group will review the annual program of the master plan and coordinate donors inputs

Linkages with universities will be strengthened through the following measures i) collaborative trials funded nationally or by external donors, within the established priorities, ii) special research responsibilities in areas such as agroeconomics, agricultural engineering, post harvest and agro-processing, with clear arrangements on time frame as well as release of results, iii) joint supervision of post-graduate work by university staff and senior staff from the Department of Research and Training, iv) revision of Sokoine University of agriculture curricula to include more training in farming systems research and research methodology, v) greater involvement of universities in the work of the research information and documentation services

Linkages with agro-industries will be facilitated by the obvious and important stake which the crop marketing boards, parastatal and private sector commodities groups have in agricultural research activities The once strong cooperation between the research establishment and the agro-industries would be reactivated by bringing the latter into a participatory partnership with the Department of Research and Training and the individual research directorates, implying also an increased financial participation by the marketing boards and other agencies concerned It is expected that, beyond commodity-centered agencies, cooperative research will also involve input-supply companies Linkages will also be established with non-governmental organizations (NGOs), especially with respect to adaptive trials, extension and training Efforts would be made to integrate NGOs' research proposals with the Department of Research and Training programs Both agro-industries and NGOs would be encouraged to be represented at the national and zonal research planning committee

THE FRAMEWORK FOR REVITALIZING AGRICULTURAL RESEARCH IN THE SAHEL

An original approach adopted by Sub-Saharan Africa countries to promote regional cooperation is through the formulation and implementation of regional Frameworks for Action (FFAs) One example is the Framework for Action for Revitalizing Agricultural Research in the Sahel, undertaken by the Institut du Sahel in collaboration with SPAAR

The Sahelian framework for action addresses the challenge of accelerating the rate of technology generation through a "three-pronged effort

(a) institutional reforms of the National Agricultural Research Systems (NARS) to evolve an enabling environment for creativity, innovation and improved performance,

(b) new modes of regional cooperation based on principles of comparative advantages and the relative strengths of NARS, and

(c) a series of cross-cutting actions to support the revitalized national and regional efforts

In essence, the basic principle behind the FFA approach is that NARS must be the building blocks of any eco-regional research agenda and should be empowered to become the leaders of that agenda "It is through the national systems, once reformed that the effective research capacity of the region can be revealed and harnessed

On institutional reforms, the objective is to create an "enabling" environment for creativity and innovation The framework for action proposes solutions to important institutional issues confronting national research systems, i e size, capacity, financial stability and management autonomy It also recommends reforms that will help NARS set priorities in a regional context Some of the novelties in the institutional reforms proposed include mechanisms to move NARS out of the public management system, the reinforcement of economic analytical capacity to ensure the necessary adjustments of the research agenda to changing economic conditions, new research management technique conducive to greater autonomy, accountability and transparency involving triparties arrangements among NARS, the Sahelian states and donors for scientific supervision, financial and management audits, a strategy of human resource development, evaluation, information exchange and research processes which reinforce the linkages between researchers and other scientists

The new mechanisms of regional collaboration are based on the concept of regional research 'poles" which are lead national centers "The poles will constitute the main foci for rapid advances in technology generation by virtue of concentration of critical mass of well trained and motivated scientists, adequate resources and efficient and flexible management systems " The research pole concept favors an approach of nationally based regional research In other words, within a given region, a group of NARS identity, one of them to which the responsibility is given to generate technologies utilizable by all the countries concerned The assignment relates to a priority regional research theme, which means that the Sahelian countries concerned have agreed on a common regional research agenda based on a convergence of national interests The selection of a research pole (lead NARS) is based on a set of criteria including a) having prepared a credible agricultural research master plan, b) availability of a critical mass of experienced and qualified researchers capable of providing scientific leadership in a regional context, c) ability to recruit and manage high level expatriate researchers within a framework of regional cooperation, d) availability of adequate research

facilities and support services as well as administration and accounting procedures, e) present agro-ecological conditions suitable to one or several collaborative research themes

In spite of difficulties inherent to this implementation, the regional research pole or "SPAAR model" is strongly endorsed by the Sahelian countries concerned Some of the main reasons are quoted below

(a) "Fundamental and strategic research should not be considered as a domain reserved for international institutes alone The regional/national research pole is the only way which can presently help strengthen the development of the capacities of West African NARS for the creation of a true African scientific domain

(b) Agricultural research is a major component for decision making in the design of an agricultural policy in a purely African perspective The SPAAR model of national research poles with regional responsibilities responds better to such a concern than the regional centre model

(c) Prospects for overall additional financial support to agricultural research from national or international sources are not good If the SPAAR Model can help to mobilize donor assistance on a more sustainable basis, it is most welcome

(d) In the long run, the national/regional research pole which will be the "coordinator" of all regional research in a priority commodity or problem area, could prove to be the best means of installing more effective links and more rational division of labor and responsibilities between NARS and IARCs

(e) Last but not least, the NARS' perception is that the research pole offers them a unique opportunity to identify and lead the implementation of regional research priorities (SPAAR 1993) Among the issues arising from the implementation of the research pole model for regional cooperation, the following could be mentioned autonomy of the pole vis a vis its host country, allocation of human resources between national and regional requirements, local statute of the research pole, scientific management and leadership, funding, program orientation, i e choice between activity specific and interdisciplinary approach "

The Republic of Mali is at the most advanced stage in setting up a regional research pole for the West Africa Sahelian Belt The main constraint faced has been inadequate commitment for sustainable donor support although the Malian NARS and the government have gone a long way in undertaking bold and relevant institutional reforms

The third dimension of the framework for action is the series of cross-cutting proposals The first proposal is to strengthen the Institut du Sahel's ability to coordinate the various actors and actions called for under the FFA, more specifically to ensure effective collaboration among Sahelian governments, NARS, donors and IARCs A second proposal aims at creating a policy analysis and research development unit within the Institut du Sahel (INSAH) A third proposal is to expand INSAH programming, monitoring and evaluation capability Other proposals relate to the establishment of a regional data bank, improvement of communication links, human capacity building, formulation of a long term strategy for regional agricultural education and training, and research management training

The Birth of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA)

Introduction

Agriculture is the most important economic activity in Eastern and Central Africa It provides employment to the majority of the populations, generates export earnings, contributes to food security produces raw material for agro-industries and creates savings in rural communities Therefore economic growth in these countries is dependent on the sustainable performance of their agricultural sectors Development of the agricultural sector depends on the competitiveness of producers in national regional and international markets and on the availability of technology to increase productivity in a sustainable manner that does not deplete or degenerate the natural resource base

Despite large investments in agricultural research and extension by governments and donors the rate of technology generation and adoption has failed to cope with the demands of rapidly-increasing populations a deteriorating natural environment and overall economic development

Background

The current effort to explore opportunities for more effective and efficient agricultural research extension and training in the Eastern Africa region began in 1990 under the auspices of the Intergovernmental Authority on Drought and Development (IGADD), facilitated by Canada's International Development Research Center (IDRC) with financial assistance from the Canadian International Development Agency (CIDA) The Thirteenth Plenary Session of the Special Program for African Agricultural Research (SPAAR) in the Hague in November 1992 endorsed the region's request to assist in the formulation of a Framework for Action (FFA) to strengthen NARSs and to foster regional collaboration A series of meetings and workshops were then organized Each of the original IGADD countries (Djibouti, Ethiopia, Kenya, Sudan and Uganda) prepared country working papers on research in five sub-sectors of the agricultural economy (i) food crops, (ii) cash/export crops (iii) natural resources management, (iv) animal production and (v) animal health

A team of scientists from the Danish Centre for Tropical Agriculture and Environment (DCTAE) was commissioned to prepare an overview paper for each of these sub-sectors Working papers on the status of agricultural research, available human and financial resources and developmental needs were prepared by the SPAAR Executive Secretariat

The Technical Centre for Agricultural and Rural Cooperation (CTA) also sponsored a series of workshops and studies to initiate regional collaboration on agricultural information needs, focusing on improving scientific documentation and information systems The ultimate objective of this initiative is to increase access to, and transfer of, knowledge for decision-making at different levels Ethiopia has been selected as the regional focal point for agricultural research information and documentation

During the same period, four regional networks (beans cassava potatoes and agroforestry) supported by USAID IDRC and other donors and managed by CIAT, IITA CIP and ICRAF respectively, sought to devolve management responsibilities to the Directors of the NARIs involved in these networks ISNAR was commissioned to work with the various stakeholders towards a smooth transfer of responsibilities and to investigate how to harmonize and rationalize activities within these networks and with regard to other ongoing regional efforts

In November 1993 the participating Eastern Africa national agricultural research institutions organized a workshop in Kampala Uganda with SPAAR support

- To reach agreements in principle on a Framework for Action to strengthen the NARSs in the region,
- To identify mechanisms to harmonize and rationalize ongoing regional collaborative research programs and to initiate new ones
- To find ways to improve technology transfer to the users of research results

At this workshop it was decided to expand the FFA initiative by inviting the following Central African and Indian Ocean countries Burundi Eritrea Madagascar Rwanda Tanzania and Zaire Most of these countries already shared some collaborative agricultural networks In addition an outline for the FFA document was formulated

A draft FFA and ISNAR report "Towards an Association of Networks for Eastern and Central Africa" were reviewed by the Directors of participating NARIs at a meeting in April 1994 at Egerton University in Kenya They decided to create an Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) to take on the challenge of implementing the FFA It was also decided that the Ugandan National Agricultural Research Organization (NARO) will be the seat of the Association The formulation of a Memorandum of Agreement (MoA) was

commissioned by the Committee of Directors of cooperating NARIs

The Committee of Directors (CD) of the proposed association met in Addis Ababa Ethiopia September 5-8, 1994 to finalize the FFA document and to establish ASARECA The meeting was also attended by the coordinators of four regional networks (bean, cassava, potatoes and agroforestry) from CIAT, IITA CIP and ICRAF as well as donor representatives from FAO IDRC the Swiss Development Cooperation (SDC), the USAID and the World Bank The main outcomes of the meeting were

- The signing of the Memorandum of Agreement for ASARECA by nine Eastern and Central African countries Burundi, Ethiopia Eritrea Kenya, Madagascar, Sudan, Tanzania Uganda and Zaire
- The approval for publication of the FFA document, "Strengthening National Agricultural Research Systems in Eastern and Central Africa" as an ASARECA/World Bank document,
- The election of Prof J K Mukiibi as the Chairman of the Committee of Directors of ASARECA for a period of two years An interim Executive Secretary of ASARECA was also appointed for a period of six months He is Professor J S Mugerwa, Dean of the Faculty of Agriculture Makarere University, Uganda The position of Executive Secretary, ASARECA will be advertised shortly
- The approval of the ASARECA Work Plan and Budget for 1994-96,
- The adoption of the African Highland Initiative as the first ASARECA activity,
- Several Working Groups were formed to accelerate the implementation of the some of the proposed future activities of ASARECA,
- ISNAR was requested to assist ASARECA in the formulation of a Constitution and Bylaws for the Association

The Rationale

The rationale for the formulation of the FFA, the establishment of ASARECA and the devolution of networks management to NARSs is to create viable national agricultural research institutions and to foster sustainable regional collaboration in agricultural research

Principle Features of the FFA

To strengthen NARSs and

- To prepare and/or update national strategic plans for agricultural research that includes stakeholders in the setting of the research agenda, are gender responsive, are concerned with environmental sustainability and ensure that the research agenda

  - Better reflects development trends and opportunities,
  - Applies a production-to-consumption approach to research,
  - Assures that collaboration across borders is based on the needs of the national programs,
  - Sets priorities based on realistic human and financial resource constraints,
  - Promotes institutional pluralism and consolidates all sources of funding to improve coherence of the national strategy,
  - Involves and empowers all stakeholders, including farmers, extension and the private sector

- To generate a demand-driven research agenda that empowers farmers by

  - Involving them in the governance of the research institutions catering to their needs,
  - Their participation in the final stages of deciding the goals of experiments and studies,
  - Involving them in the evaluation of research results of both "on-farm" and "on-station" experiments

- To strengthen their policy analysis function to underpin the research agenda and provide policy-makers with the factors that limit the successful introduction adoption and impact of new technology

- To improve research programming, monitoring and evaluation at the national level to ensure research quality and relevance

- To reinforce their governance and broaden their institutional base (institutional pluralism) by providing management autonomy for participating institutions and through the creation of inclusive oversight and coordinating mechanisms such as National Agricultural Research Councils (NARCs)

- To build up their human capacity by making scientists accountable for results through training and through the establishment of schemes of service that provide career incentives to research scientists

- To build up national scientific information and communication systems

- To provide stable and sustainable funding for research through the establishment of National Agricultural Research Funds (NARFs) and "Consolidated Funding Mechanisms" (CFMs), complemented by privately-operated alternative funding mechanisms such as private foundations funded by endowments

To Develop Further Regional Collaboration in Research

- By harmonizing and rationalizing current collaborative networks and transforming them into "regional collaborative programs" that are owned by the participating NARSs

- By setting priorities for regional collaboration and helping start new high priority initiatives in collaboration on agricultural and natural resources management research
- By creating a regional governance structure of participating NARSs consisting of
  - A Committee of Directors (CD) under the auspices of a Regional Conference of Ministers to provide the necessary political support,
  - Ad Hoc Technical Committees (TCs) and Working Groups (WGs) to ensure research quality and relevance of collaborative efforts,
  - A small Executive Secretariat to assist the DC with its functions
  - Task Forces of NARS scientists responsible for program implementation

- By establishing a new partnership with the IARCs active in the region aligned with the evolving eco-regional orientation of the Consultative Group on International Agricultural Research (CGIAR)
- By bringing about new modes of coordinated funding whereby the allocation of regional funds to the NARSs will be decided by the DC and administered by participating institutions
- By setting up regionally interlinked national scientific documentation and information systems

To Improve Technology Delivery to Producers

- By fostering closer liaison between scientists and extension practitioners through the joint testing of appropriate technology driven systems
- By building human capacity in extension, including the upgrading of multi-purpose grassroots-level agents This will increase understanding of the farming enterprise and develop the trust of farmers

Expectations

- Technological innovations better adapted to local situations and higher rates of technology diffusion and adoption
- A more demand-driven research agenda developed by increased farmer participation involving them in institutional governance
- Gradual broadening of the research agenda and its client base to incorporate issues important to a market-driven agriculture including emphasis on trade, utilization agro-processing, and market and product development
- The organization of vibrant interchanges between scientists and their clients
- Gradual broadening of the research agenda and its client base to incorporate issues important to a market-driven agriculture, including emphasis on trade, product use agro-processing, market and product development and policy analysis
- Stability of the institutional environment of NARSs including funding, programming and staffing
- Increased participation of faculties of agriculture and veterinary sciences private sector institutions farmers/herders and their organizations, NGOs and extension in human capacity-building and technology generation and dissemination
- Gradual decrease in outside technical assistance and greater use of indigenous human resources
- More substantial interaction with relevant NGOs
- Rationalization and harmonization of the regional agricultural research system through a reduction in the number of networks without clear national and regional priorities and by the elimination of uncoordinating regional efforts

Implementation and the Role of ASARECA

Signature of the Memorandum of Agreement by the institutions participating in ASARECA in Addis Ababa, Ethiopia, September 1994 signaled their endorsement of the principles for the strengthening of the NARSs vital for successful regional collaboration These can only be applied by individual institutions and will be adapted to specific country situations

An important activity of the Association during its first year will be to seek the political support of the ministers responsible for agricultural research in the participating countries This should result in a realistic representation of the national agricultural research systems of the participating countries A Conference of Ministers will be convened in late 1995 or early 1996 for the formal endorsement of the MoA

For the first three years the Executive Secretariat will be based in Kampala Uganda The nomination of an interim Executive Secretary was made in September 1994 in Addis Ababa Ethiopia The position will be advertised and filled within six months

The Committee of Directors (at Egerton University) decided to request ISNAR assistance in

- Establishing the bylaws of ASARECA
- Research priority setting in a regional context,
- Planning of human resources development in a regional context
- Creation of an efficient research management information and communication system among the participating institutions and with other collaborating institutions
- Management of the transformation of the operating arrangements for the ongoing networks to the new governance structure decided by the CD

While nominating the ASARECA Executive Secretary the CD also

established five Working Groups consisting of senior scientists of the participating institutions to help define specific interventions in the following areas

- *Human resources development* to work with ISNAR in developing concrete proposals to strengthen the scientific capacity of the NARSs,
- *Agricultural research resource management* also to work with ISNAR on concrete recommendations for improving both national and regional research management information and for regional priority setting,
- *Scientific information and documentation* to work with CTA on development of this initiative,
- *Agricultural policy analysis* to develop proposals to strengthen the NARSs' capacity in this important area and to suggest collaborative arrangements,
- *Technology delivery systems* to work with consultants on concrete recommendations for the testing and adaptation of delivery systems to small farmers (improved planting materials, veterinary services in conjunction with animal husbandry techniques, etc)

Following completion of the studies, the WGs will advise the CD on the implementation of the recommendations

If and when required ad hoc Technical Committees will be created by the CD in close consultation with concerned donors and partner institutions, including the IARCs, for evaluating and advising with regard to ongoing collaborative research programs, within available funds The preliminary budget (July 1994-June 1996) also provides for TCs to advise the CD on the quality and relevance of new initiatives These may include new programs on constraints in maize and rice production, the Highlands Initiative a regional collaborative research program proposal on natural resources management sponsored by ICRAF, a collaborative effort to strengthen capacity for policy analysis etc Proposals to start up new collaborative regional programs will be carefully screened for consistency with national and regional priorities They will be endorsed only if they address well-identified constraints of common importance to all or an important subset of participating NARSs

The formal presentation and adoption of the Eastern and Central Africa FFA by the SPAAR membership is scheduled for the 15th Plenary Session in South Africa in March 1995